

REPORT ON OIL ENGINE MACHINERY.

No. 573

Received at London Office 2-DEC 1955

Date of writing Report 20th Sept 1955 When handed in at Local Office 19 Port of Augsburg, Moritzplatz 4

No. in Survey held at Mannheim Date, First Survey 20th July, Last Survey 30th August, 1955
Reg. Book. Number of Visits 4

Single on the Twin Triple Quadruple Screw vessel *Miliana* Tons Gross - Net -

Built at Bremen By whom built Messrs. Rolandwerft Yard No. 857 When built -

Engines made at Mannheim By whom made Messrs. Motorenwerke Mannheim AG Engine No. 2904/1 When made 1955

Donkey Boilers made at - By whom made - Boiler No. - When made -

Brake Horse Power Maximum 1000 Service 1000 Owners - Port belonging to -

M.N. as per Rule - Is Refrigerating Machinery fitted for cargo purposes - Is Electric Light fitted -

Trade for which vessel is intended -

OIL ENGINES, &c. - Type of Engines TRH 348 AU, supercharged 2 or 4 stroke cycle 4 Single or double acting single

Maximum pressure in cylinders 58 kg/cm² Diameter of cylinders 320 mm Length of stroke 480 mm No. of cylinders 8 No. of cranks 8

Mean Indicated Pressure 9.4 kg/cm² Span of bearings (i.e., distance between inner edges of bearings in way of a crank) 390 mm

Is there a bearing between each crank yes Revolutions per minute Maximum - Service 375

Flywheel dia. 1000 mm Weight 310 kgs. Moment of inertia of flywheel (lbs. in² or Kg.cm²) 100 kgm² Means of ignition dir. in Kind of fuel used gas oil

" " " " balance wts. (" " " ")

Crank Shaft, Solid forged Semi built All built dia. of journals as per Rule - as fitted 220 mm Crank pin dia. 200 mm Crank webs Mid. length breadth 320 mm Mid. length thickness 100 mm shrunk Thickness parallel to axis - Thickness around eye-hole -

Flywheel Shaft, diameter as per Rule - as fitted - Intermediate Shafts, diameter as per Rule - as fitted - Thrust Shaft, diameter at collars as per Rule - as fitted -

Tube Shaft, diameter as per Rule - as fitted - Screw Shaft, diameter as per Rule - as fitted - Is the (tube screw) shaft fitted with a continuous liner (-)

Bronze Liners, thickness in way of bushes as per Rule - as fitted - Thickness between bushes as per Rule - as fitted - Is the after end of the liner made watertight in the propeller boss -

If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner -

If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive -

If two liners are fitted, is the shaft lapped or protected between the liners - Is an approved Oil Gland fitted at the after end of stern tube -

If so, state type - Length of bearing in Stern Bush next to and supporting propeller -

Propeller, dia. - Pitch - No. of blades - Material - whether moveable - Total developed surface - sq. feet

Moment of inertia of propeller including entrained water (lbs. in² or Kg.cm²) - Kind of damper, if fitted -

Method of reversing Engines hydraulic pneumatic Is a governor or other arrangement fitted to prevent racing of the engine yes Means of lubrication forced Thickness of cylinder liners 20 mm

Are the cylinders fitted with safety valves yes Are the exhaust pipes and silencers water cooled or lagged with non-conducting material lagged

If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine -

Cooling Water Pumps, No. and how driven 1 x 45 m³/h eff. Working F.W. - 1 x 31 m³/h eff.

S.W. - Spare F.W. - S.W. - Is the sea suction provided with an efficient strainer which can be cleared within the vessel -

Bilge Pumps worked from the Main Engines, No. and capacity 1 x 31 m³/h eff. Can one be overhauled while the other is at work -

Pumps connected to the Main Bilge Line (No. and capacity of each - How driven -

Is the cooling water led to the bilges - If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping arrangements -

Ballast Pumps, No. and capacity - Power Driven Lubricating Oil Pumps, including spare pump, No. and size -

Are two independent means arranged for circulating water through the Oil Cooler - Branch Bilge Suctions -

No. and size: - In machinery spaces - In pump room -

In holds, &c. -

Direct Bilge Suctions to the engine room bilges, No. and size -

Are all the bilge suction pipes in holds and tunnel well fitted with strum-boxes - Are the bilge suction in the machinery spaces led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges -

Are all Sea Connections fitted direct on the skin of the Ship - Are they fitted with valves or cocks - Are they fixed

sufficiently high on the ship's side to be seen without lifting the platform plates - Are the overboard discharges above or below the deep water line -

Are they each fitted with a discharge valve always accessible on the plating of the vessel - Are the blow off cocks fitted with a spigot and brass covering plate -

What pipes pass through the bunkers - How are they protected -

What pipes pass through the deep tanks - Have they been tested as per Rule -

Are all pipes, cocks, valves and pumps in connection with the machinery and all boiler mountings accessible at all times -

Is the arrangement of valves and their connections such as to prevent the possibility of water passing from the sea or from water tanks into the cargo or machinery spaces, or from one compartment to another -

Is the shaft tunnel watertight - Is it fitted with a watertight door - worked from -

If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork -

Main Air Compressors, No. - No. of stages - diameters - stroke - driven by -

Auxiliary Air Compressors, No. - No. of stages - diameters - stroke - driven by -

Small Auxiliary Air Compressors, No. 1 No. of stages 2 diameters 160/65 mm stroke 100 mm driven by engine

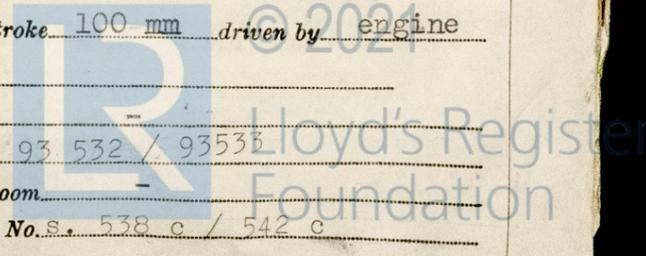
What provision is made for first charging the air receivers -

Scavenging Air Pumps or Blowers, No. - How driven -

Auxiliary Engines Have they been made under survey yes Engine Nos. 93 532 / 93535

Makers' name Messrs. Süddeutsche Bremsen A.G. Position of each in engine room - of Munich Augsburg. Report No. s. 538 c / 542 c

8920-66E110-16E110



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DSF:

State No. of report or certificate 55: /2405/2400/2402/2

AIR RECEIVERS:—Have they been made under survey yes State No. of report or certificate 55: /2405/2400/2402/2

State full details of safety devices safety valve on each air receiver

Can the internal surfaces of the receivers be examined and cleaned yes Is a drain fitted at the lowest part of each receiver yes

Injection Air Receivers, No. - Cubic capacity of each - Internal diameter - thickness -

Seamless, welded or riveted longitudinal joint - Material - Range of tensile strength - Working pressure -

Starting Air Receivers, Nos. 5 for 2 engines Total cubic capacity 500 litres Internal diameter 464 mm thickness 10 mm

Seamless, welded or riveted longitudinal joint fusion weld Material S.M. Steel Range of tensile strength 49.7 kg/mm² Working pressure 33 ATM.

IS A DONKEY BOILER FITTED - If so, is a report now forwarded -

Is the donkey boiler intended to be used for domestic purposes only -

PLANS. Are approved plans forwarded herewith for shafting no. approved 9.6.55 Receivers - Separate fuel tanks -

(If not, state date of approval)

Donkey boilers - General pumping arrangements - Pumping arrangements in machinery space -

Oil fuel burning arrangements -

Have Torsional Vibration characteristics been approved yes yet Date and particulars of approval London letter to Hamburg, dd. 5-12-55

SPARE GEAR.

Has the spare gear required by the Rules been supplied yes State if for "short voyages" only -

State the principal additional spare gear supplied -

EINLAGE 59

MOTORENWERKE MANNHEIM A.G.
VORM. KANZ. ABT. STAT. MOTORENBAU

The foregoing is a correct description

Manufacturer.

Dates of Survey while building

During progress of work in shops - - 1955: July, 20th, 23rd; August, 3rd, 30th.

During erection on board vessel - - -

Total No. of visits 4

Dates of examination of principal parts—Cylinders 22.7.55 Covers 22.7.55 Pistons - Rods - Connecting rods 26.5.55

Crank shaft 20.7.55 Flywheel shaft - Thrust shaft - Intermediate shafts - Tube shaft -

Screw shaft - Propeller - Stern tube - Engine seatings - Engine holding down bolts -

Completion of fitting sea connections - Completion of pumping arrangements - Engines tried under working conditions -

Crank shaft, material S.M. Steel Identification mark 8056 Flywheel shaft, material - Identification mark -

Thrust shaft, material - Identification mark - Intermediate shafts, material - Identification marks -

Tube shaft, material - Identification mark - Screw shaft, material - Identification mark -

Identification marks on air receivers LLOYD'S TEST DSF 50 - 7647 LLOYD'S TEST DSF 50 - 7640 LLOYD'S TEST DSF 50 - 7642 LLOYD'S TEST DSF 50 - 7641

T.P. 53 ATM. T.P. 53 ATM. T.P. 53 ATM. T.P. 53 ATM.

W.P. 33 ATM. W.P. 33 ATM. W.P. 33 ATM. W.P. 33 ATM.

Welded receivers, state Makers' Name 23.9.55 W.S. 23.9.55 W.S. 23.9.55 W.S. 23.9.55 W.S.

Is the flash point of the oil to be used over 150°F - 50 - 764

Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with - LLOYD'S TEST DSF

Full description of fire extinguishing apparatus fitted in machinery spaces - T.P. 53 ATM

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo - If so, have the requirements of the Rules been complied with - W.P. 33 ATM

What is the special notation desired - 23.9.55 W.S.

If the notation for ice strengthening is desired, state whether the requirements in this respect have been complied with -

Is this machinery duplicate of a previous case - If so, state name of vessel -

General Remarks (State quality of workmanship, opinions as to class, Speed restrictions, &c.)

This heavy oil main engine has been constructed under special survey in accordance with the requirements of the Rules and Regulations of this Society and otherwise with the approved plans. The materials used in the construction is good and the workmanship was found to be satisfactory. The engine has been tested running on makers' test bed under full-, over-, and partial loads with satisfactory results.

In my opinion the vessel for which this engine is intended will be eligible for the notation + L.M.C. (with date) when the whole machinery has been satisfactorily fitted aboard the vessel and has been tried under full working conditions.

Survey

The amount of Entry Fee 1000.- P.H.P. 1.050.-

Final insp. cranksh. 20.- When applied for 19

Special DM 80.- When received 19

Test bed trial DM 80.-

Donkey Boiler Fee DM 50.-

Travelling Expenses (if any) DM 50.-

Committee's Minute Total DM 1.200.-

Assigned See Rpt. 4 c.

TUESDAY 10 JUL 1956

W. J. M. Engineer Surveyor to Lloyd's Register of Shipping.



Rpt. 4b

Date of w

No. in Reg. Book

Built at

Engines

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